

A Reinforcement for Multifunctional Composites for Non-Parasitic Radiation Shielding, Phase I

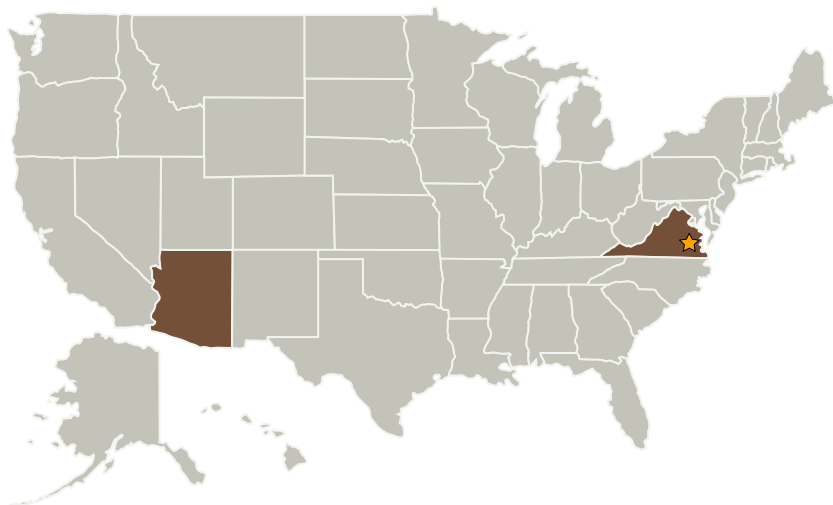
Completed Technology Project (2004 - 2004)



Project Introduction

Innovative lightweight radiation shielding materials are enabling to shield humans in aerospace transportation vehicles and other human habited spaces. Multifunctional materials which provide non-parasitic shielding as well as structural performance is needed. Boron can provide neutron and cosmic radiation shielding, but the only available boron fiber is a large diameter monofanant on a tungsten substrate whose high Z number preclude it use in radiation applications. This program will develop boron fibers on carbon (low Z no.) fiber tow substrate utilizing an existing system for spreading carbon fiber tow and chemically vapor depositing (CVD) coatings. Processing will be optimized to produce high strength boron fiber tow which will be utilized in select polymer matrix composites to demonstrate the multifunctionality of structural and radiation shielding.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Langley Research Center(LaRC)	Lead Organization	NASA Center	Hampton, Virginia
MER Corporation	Supporting Organization	Industry	Tucson, Arizona



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Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Management	2
Technology Areas	2

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Langley Research Center (LaRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations

Arizona

Virginia

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

James C Withers

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
 - └ TX06.5 Radiation
 - └ TX06.5.3 Protection Systems